

IN THE CLAIMS:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) A substrate conveyer robot comprising:

a rotatable base including a housing portion and a pulley portion integral with the housing portion, said rotatable base being mounted on a body portion of the robot for rotation relative thereto and defining a pivotal center for the robot, and said rotatable base being and rotatably driven around the pivotal center by a first motor inside the a body portion of the robot;

a first spindle mounted for rotation around an axis coaxial with the pivotal center, independent of the rotation of the rotatable base;

a second motor, mounted within said housing portion, for rotatably driving the first spindle about the pivotal center;

a first arm in the form of an elongated housing, the elongated housing being mounted on the rotatable base, attached at one end to the first spindle and containing the pulley of the rotatable base, with the housing of the rotatable base located external to the elongated housing;

a second spindle mounted on a second end of the first arm for rotation independent of the rotation of the first arm, and first rotation transfer means for

transferring rotation of the first arm to the second spindle, said first rotation transfer means including the pulley portion, the second spindle pulleys and a belt wound around the pulley portion and the second spindle, said first rotation transfer means being mounted inside the elongated housing of the first arm and providing a 2:1 gear ratio;

a second arm attached at one end to the second spindle;

a third spindle mounted on a second end of the second arm for rotation independent of the rotation of the second arm, and second rotation transfer means for transferring rotation of the second arm to the third spindle, said second transfer means including pulleys and a timing belt, mounted inside the second arm and providing a 1:2 gear ratio, wherein a distance between the first spindle and the second spindle is equal to a distance between the second spindle and the third spindle;

a third arm attached at one end to the third spindle;

a hand for holding a substrate attached to a second end of the third arm; and control means for controlling angles of rotation θ and ϕ in such a manner that a center point of the substrate held by the hand moves linearly on a straight line parallel to and spaced from a line passing through the pivotal center, in an arbitrary direction within an accessible range of the hand, wherein θ is the angle of rotation of the rotatable base about the pivotal center and ϕ is the angle of rotation of the first arm about the pivotal center, whereby a substrate is inserted into and removed from a container.

6. (Previously Presented) A substrate conveyer robot as claimed in claim 5, wherein said control means controls each of the angles of rotation θ and ϕ so as to satisfy the following equation:

$$\{m + 2 L \sin(\phi)\} \sin(\theta) = h \text{ (constant)}$$

wherein:

h is a constant distance between the straight line along which the center point of the substrate moves and the line passing through the pivotal center;

L is the distance between the second spindle and the third spindle; and

m is the distance between the third spindle and the center of the substrate.